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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,507

10/10/2006

German Spangenberg

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57381 7590 06/26/2008

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EXAMINER

PAK, YONG D

ART UNIT

PAPER NUMBER

1652

MAIL DATE

DELIVERY MODE

06/26/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/553,507	<b>Applicant(s)</b> SPANGENBERG ET AL.	
	<b>Examiner</b> Yong D. Pak	<b>Art Unit</b> 1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10/14/05.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 30-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 30-57 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This application is a 371 of PCT/AU04/00493..

Claims 30-57 are pending.

### ***Election/Restrictions***

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-42, drawn to a polynucleotide encoding citrate synthase, malate dehydrogenase or PEPC polypeptide from a clover, medic, ryegrass or fescue species or functionally active fragment or variants thereof.

Group II, claim(s) 42-43, drawn to a plant or plant seed or plant part comprising the polynucleotide of Group I.

Group III, claim(s) 44-49, drawn to a method of modifying organic acid synthesis, organic acid secretion, nutrient acquisition, aluminum and acid soli tolerance, nitrogen fixation or nodule function in a plant by introducing the polynucleotide of Group I into said plant.

Group IV, claim(s) 50-51, drawn to a SNP of the polynucleotide of Group I.

Group V, claim(s) 52-57, drawn to citrate synthase, malate dehydrogenase or PEPC polypeptide from a clover, medic, ryegrass or fescue species or functionally active fragment or variants thereof.

In addition, applicants are required to elect a specific DNA sequence selected from SEQ ID NO:1, 3, 10, 11, 13-17, 19, 327, 329-335, 336, 338-344, 349, 351, 353,

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21, 23-29, 30, 32-34, 36, 38, 40, 42-44, 46, 48-111, 113, 115, 117-183, 185, 205, 207-218, 220-252, 254-271, 273-276, 278-287, 288, 290-293, 295-297, 299-301, 304-308, 308, 187, 189, 191-197, 199, 201, 203, 310, 312-314, 315, 317-319, 321-322, 323, 325 and/or 347 and/or ONE specific polypeptide sequence of SEQ ID NO:2, 12, 18, 20, 328, 337, 350, 352, 354, 22, 31, 35, 37, 39, 41, 45, 47, 112, 114, 116, 184, 186, 206, 219, 253, 272, 277, 289, 294, 297, 303, 307, 309, 188, 190, 198, 200, 202, 204, 311, 316, 320, 324, 326 and/or 348. .

**This is not an election of species.** The above polypeptides and the above polynucleotides lack the same or corresponding special technical feature and are **patentably distinct inventions**. Each of the polynucleotides have different structure and/or function and encoded polypeptides having different structure and function, such as substrate specificity. Each of the polynucleotides and polypeptides are independent chemical entities and require independent search in the patent and non-patent literature.

The inventions listed as Groups I-V do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The technical feature linking Groups I-V appears to be that they all relate to a citrate synthase, malate dehydrogenase or PEPC polypeptide from a clover, medic, ryegrass or fescue species or functionally active fragment or variants thereof.

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However, Tesfaye et al. (Plant Physiology, December 2001 - form PTO-1449) discloses a malate dehydrogenase and phosphoenolpyruvate carboxylase from *Medicago sativa* (page 1842). BRENDA database – EC – 2.3.3.1 – citrate synthase (BRENDA – form PTO-892) discloses many citrate synthases that are "variants" of a citrate synthase from clover, medic, ryegrass or fescue species.

Therefore, the technical feature linking the inventions of Groups I-V does not constitute a special technical feature as defined by PCT Rule 13.2, as it does not define a contribution over the prior art.

The special technical feature of Group I is a polynucleotide encoding a citrate synthase, malate dehydrogenase or PEPC polypeptide and a plant cell comprising said polynucleotide.

The special technical feature of Group II is a plant or plant seed or plant part comprising the polynucleotide encoding a citrate synthase, malate dehydrogenase or PEPC polypeptide from a clover, medic, ryegrass or fescue species or functionally active fragment or variants thereof..

The special technical feature of Group III is a method of modifying organic acid synthesis, organic acid secretion, nutrient acquisition, aluminum and acid soli tolerance, nitrogen fixation or nodule function in a plant by introducing the polynucleotide encoding a citrate synthase, malate dehydrogenase or PEPC polypeptide from a clover, medic, ryegrass or fescue species or functionally active fragment or variants thereof into said plant.

The special technical feature of Group IV is a SNP of the polynucleotide encoding a citrate synthase, malate dehydrogenase or PEPC polypeptide from a clover, medic, ryegrass or fescue species or functionally active fragment or variants thereof.

The special technical feature of Group V is a citrate synthase, malate dehydrogenase or PEPC polypeptide from a clover, medic, ryegrass or fescue species or functionally active fragment or variants thereof.

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Accordingly, Groups I-V are not so linked by the same or a corresponding special technical feature as to form a single general inventive concept.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yong Pak whose telephone number is 571-272-0935. The examiner can normally be reached 6:30 A.M. to 5:00 P.M. Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nashaat Nashed can be reached on 571-272-0934. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

/Yong D Pak/  
Primary Examiner, Art Unit 1652